Anderson County

Estimated Economic Impact of Agriculture, Food, and Food Processing Sectors
5/24/2016

Using the most recent IMPLAN data available (2014) adjusted for 2016, 16 agriculture, food, and food processing sectors were analyzed to determine their overall contribution to the Anderson County economy.[1]

These 16 sectors have a total direct output of approximately **$121.5 million** and support **665.1 jobs** in Anderson County. Running the model for all 16 sectors simultaneously produces the following results:

Agriculture, Food, and Food Processing Sector Contribution to Overall Anderson County Economy						
Impact Type[2]	**Employment**	**% Employment**	**Total Value Added[3]**	**Total Value Added % of Gross Regional Product[4]**	**Output[5]**	**Output % of Gross Regional Product**
Direct Effect	671.6	17.86%	$76,369,196.43	31.73%	$121,514,950.61	50.49%
Indirect Effect	54.0	1.44%	$3,700,204.20	1.54%	$7,095,014.76	2.95%
Induced Effect	107.0	2.85%	$6,769,239.93	2.81%	$12,523,477.13	5.20%
Total Effect	832.5	22.14%	$86,838,640.57	36.08%	$141,133,442.50	58.64%

As shown in the above table, agriculture, food, and food processing sectors support **826.1 jobs**, or **21.97%** of the entire workforce in the county. These sectors provide a total economic contribution of approximately **$141.2 million, roughly 58.65% of the economy.**

Another metric used to calculate the importance of sectors in an economy is their value added as a percentage of GRP. Total value added by the 16 agriculture, food, and food processing sectors is approximately **$87.1 million**, or **36.18% of the GRP**. This indicates that personal income, business income, and taxes generated by these sectors account for **36.18% of the total economy**.

The following tables document the overall summary numbers of the model, top industries affected by employment and output, and a listing of all industries that were analyzed.

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1 Article on building a contribution analysis in IMPLAN that avoids double counting: http://www.implan.com/index.php?option=com_content&view=article&id=660%3A660&catid=253%3AKB33&Itemid=70

2 Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

3 Value added = labor income + indirect business taxes + other property type income.

4 GRP = final demand of households + governments expenditures + capital + exports - imports - institutional sales.

5 Output = intermediate inputs + value added.

In the top ten agriculture, food, and food processing sectors by employment, the beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming sector is the top employer with **374.1 employees**. This table also shows the amount of jobs that are created by the agriculture industry in Anderson County.

Top Ten Sectors by Employment		
Sector	**Total Employment**	**Total Output**
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	818.8	$138,942,596.14
Grain farming	78.0	$44,186,753.86
All other food manufacturing	75.1	$28,461,104.97
Wholesale trade	63.7	$12,573,255.72
Support activities for agriculture and forestry	62.3	$17,157,104.13
All other crop farming	60.8	$7,279,050.60
Fluid milk manufacturing	47.7	$38,569,059.23
Veterinary services	38.3	$3,203,534.19
Other animal food manufacturing	20.3	$29,109,958.56
Monetary authorities and depository credit intermediation	18.8	$3,001,485.16

The beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming sector directly contributes approximately **$48.1 million** to the Anderson County economy. The table below also shows the amount of revenue that is generated in other industries by having a strong agriculture industry.

Top Ten Sectors by Output		
Sector	**Total Employment**	**Total Output**
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	818.8	$138,942,596.14
Grain farming	78.0	$44,186,753.86
Fluid milk manufacturing	47.7	$38,569,059.23
Other animal food manufacturing	20.3	$29,109,958.56
All other food manufacturing	75.1	$28,461,104.97
Support activities for agriculture and forestry	62.3	$17,157,104.13
Oilseed farming	7.5	$13,249,121.17
Wholesale trade	63.7	$12,573,255.72
Owner-occupied dwellings	0.0	$7,931,715.31
Dairy cattle and milk production	10.4	$7,329,797.73

Below is a summary of all agriculture data with employment levels and output level. These values can tell how many jobs are represented by each agriculture, food, and food processing sector and the output they contributed to the Anderson County economy.

All Agriculture, Food, and Food Processing Sectors		
Sector	**Total Employment**	**Total Output**
Oilseed farming	15.5	$20,920,239.22
Grain farming	32.6	$14,301,301.50
Vegetable and melon farming	0.6	$268,524.06
Fruit farming	0.2	$49,103.71
Tree nut farming	0.0	$308.43
Greenhouse, nursery, and floriculture production	0.1	$23,099.18
All other crop farming	48.2	$4,455,531.28
Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	374.1	$48,119,377.03
Dairy cattle and milk production	4.9	$3,470,956.32
Poultry and egg production	1.2	$1,545,612.69
Animal production, except cattle and poultry and eggs	181.0	$25,351,623.48
Poultry processing	0.7	$200,475.18
Bread and bakery product, except frozen, manufacturing	4.6	$1,809,011.51
Frozen cakes and other pastries manufacturing	0.2	$33,297.38
All other industrial machinery manufacturing	0.5	$378,281.90
Veterinary services	7.2	$588,207.75

All 105 counties in Kansas have an IMPLAN model and an agriculture, food, and food processing contribution summary. These values do not factor in the retail environment of food sales. Food retail is important, but in order to provide the most accurate picture of what production agricultural and processing contributes to Anderson County, the retail sector was omitted.

Calculations Including Ethanol Production

Estimated Impact of Agriculture, Food, Food Processing and Ethanol Production on Anderson County Economy

In 2014, Anderson County produced **50 million gallons** of ethanol worth an estimated **$117 million** dollars. The impact on page one includes by-products from ethanol plants such as distiller's dried grain with solubles (DDGS), but do not account for the economic activity generated by ethanol fuel production. Namely, this is because ethanol fuel production is included in sector 165, other basic organic chemical manufacturing, which encompasses more than ethanol production and was not modeled in the original scenario. Therefore, utilizing the full sector value would inflate the results. If we were to include sector 165 in the analysis with a direct value of $117 million, the total contribution to agriculture increases to **$279.8 million**, represents **27.42% of the jobs**, and increases total value added to **$124.3 million** in Anderson County.

Agriculture, Food, Food Processing and Ethanol Sector Contribution to Overall Anderson County Economy						
Impact Type[2]	**Employment**	**% Employment**	**Total Value Added**[3]	**Total Value Added % of Gross Regional Product**[4]	**Output**[5]	**Output % of Gross Regional Product**
Direct Effect	709.4	18.87%	102,961,255.9	42.78%	238,514,951.5	99.11%
Indirect Effect	138.4	3.68%	9,759,732.7	4.06%	19,849,794.7	8.25%
Induced Effect	183.1	4.87%	11,580,319.9	4.81%	21,427,627.2	8.90%
Total Effect	1,030.9	27.42%	124,301,308.5	51.65%	279,792,373.5	116.26%

10 Direct, indirect, and induced effects sum together to estimate the total economic contribution in the state. **Direct effects** capture the contribution from agricultural and food products. **Indirect effects** capture the economic benefit from farms and agricultural businesses purchasing inputs from supporting industries within the state. **Induced effects** capture the benefits created when employees of farms, agricultural businesses, and the supporting industries spend their wages on goods and services within the state.

11 Value added = labor income + indirect business taxes + other property type income.

12 GRP = final demand of households + governments expenditures + capital + exports - imports –institutional sales.

13 Output = intermediate inputs + value added.